

Massachusetts Department of Public Health

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Antiviral Medications Personal Stockpiling Not Recommended -- Advice for Health Care Providers--

Concern about the spread of avian influenza A (H5N1) has caused many individuals in the United States, including in Massachusetts, to ask their health care providers for prescriptions for the antiviral medication oseltamivir (trade name Tamiflu[®], manufactured by Roche). Others have attempted to purchase this drug over the internet.

Background

Avian influenza A (H5N1) infections in wild birds and poultry have spread from Eastern Asia to Central Asia, and most recently have been identified in Turkey and Romania. Since 2003, over 100 million domestic birds have been affected by the current avian outbreak.

Since 2004, human cases have been limited to Eastern Asia (Cambodia, Indonesia, Thailand and Vietnam). As of October 11, 2005, 117 human cases have been reported, the mortality rate is currently 50% and individual cases and family clusters continue to be identified (WHO. New Engl J Med 2005 <http://content.nejm.org/cgi/content/full/353/13/1374> and the WHO Avian Influenza website http://www.who.int/csr/disease/avian_influenza/en/)

However, almost all human cases of avian influenza have been associated with exposure to ill or infected poultry. Only in a small number of the cases has exposure to infected persons been implicated. At the current time, avian influenza is **not** efficiently transmitted person-to-person. This is a necessary component for influenza A (H5N1) to evolve into the next pandemic strain of influenza.

While pandemic influenza is considered inevitable, it may not be due to influenza A (H5N1). In order to prepare for the next pandemic of influenza, state and federal health authorities in the U.S. and in other countries are preparing plans to attenuate the impact of a pandemic to the extent possible.

In the event of a flu pandemic, it is likely that a vaccine to protect people from the disease will not be available for approximately six months. Federal authorities here are working with vaccine manufacturers to identify ways to accelerate vaccine production, and to increase the U.S. stockpile of antiviral medications.

Recommendations of the Massachusetts Department of Public Health (MDPH)

While we support the federal efforts to stockpile antiviral agents, the MDPH does **not** recommend personal stockpiling of oseltamivir or other antiviral agents for the following reasons:

- Personal stockpiles of oseltamivir will **compound** the existing problems with availability of this antiviral agent in the United States during the upcoming influenza season for those who may need it most. Commercial supplies of oseltamivir are expected to improve gradually over the next few years and the national stockpile will increase as well.
- The existing, limited supplies of oseltamivir and other antiviral agents **should be prioritized** as outlined below.
 - The highest current priority for use of oseltamivir is for **treatment** of people during the upcoming regular influenza season who are at highest risk from serious complications from influenza infection (e.g., persons ≥ 65 years, children 6-23 months of age and persons with certain chronic diseases).
 - The next highest priority for use of oseltamivir (and other influenza antiviral medications) is for **prophylaxis** in persons at high risk of serious complications from influenza infection who are exposed to influenza (e.g., a hospital or nursing home with an outbreak of influenza or a household in which someone has been diagnosed with influenza) during the regular influenza season.
- Inappropriate and inconsistent use of oseltamivir will **increase resistance** to oseltamivir by both avian and non-avian strains of influenza viruses by exposing the viruses to selective pressure towards resistance. Sub-inhibitory concentrations of an agent, as might result from inappropriate and inconsistent use, are particularly likely to induce resistance. This would seriously affect our ability to use this antiviral medication for avian influenza, as well as other circulating strains.
- To date, almost all cases of avian influenza in humans have been associated with exposure to **birds** rather than person-to-person transmission.
- The benefits of antivirals may be **limited** when used as therapy, even when initiated within 48 hours of onset. In uncomplicated cases, antiviral agents only reduce symptom duration and viral shedding by 1-2 days. Data are also limited regarding the effectiveness of antivirals in preventing serious influenza complications.
- To date, most avian influenza isolates are still **sensitive** to oseltamivir. However, increasing resistance has been reported in birds and in one human case from Vietnam. In addition, increasing resistance (up to 16%) of other circulating strains of influenza to oseltamivir has also recently been identified.
- Four drugs are licensed for the treatment or prophylaxis of influenza infections: the adamantanes (amantadine and rimantadine) and the neuraminidase inhibitors (oseltamivir and zanamivir). At the current time, oseltamivir is the **only** antiviral

known to have some effectiveness in the treatment and prophylaxis of avian influenza. Widespread resistance to the adamantanes has been reported and inhaled zanamivir has not been studied in cases of avian influenza.

- If a different strain of influenza emerges to cause widespread human illness, it is **not possible to predict** which antiviral agent would be most effective.
- Personal stockpiles of oseltamivir may actually **increase the potential for harm** when used without consulting a health care provider. All antiviral medications are associated with side effects of varying degrees. An individual may take an antiviral when it is not appropriate (e.g., when an antibiotic is indicated) or when it is not needed (e.g. when they have an upper respiratory infection). In addition, oseltamivir may have serious interactions with other medications that an individual is taking.
- Oseltamivir is **expensive** (currently \$65.99 for a 10-pill bottle which is equivalent to a 5 day course of treatment). If one were to use it for prophylaxis, the course would extend for weeks or months, adding significantly to the cost.
- Oseltamivir has a **limited shelf life**. When stored properly, capsules are only guaranteed for 5 years and the oral suspension for 2 years. No one knows when a pandemic will arise, and if his or her personal stockpiles will still be potent.

Personal Protective Measures to Prevent Influenza and Avian Influenza

Health care providers should review with their patients the steps outlined below which will minimize their risk and that of those around them from acquiring influenza and other respiratory infections.

1. Wash your hands.

Wash your hands often with soap and warm water or use an alcohol based hand sanitizer.

2. Avoid touching your eyes, nose or mouth.

This decreases the chance that you will introduce influenza virus and other infectious agents into parts of your body where infection can begin. It also decreases your potential infectiousness to others.

3. Cover your mouth when you cough or sneeze.

Never cough in the direction of someone else. Cough or sneeze into a tissue or the inside of your elbow.

4. Clean things that are touched often.

Clean things that are touched often at home, work or school like door or refrigerator handles, computer key boards / mouse, phone and water faucets.

5. Avoid close contact with others who are ill.

Avoid holding, hugging or kissing anyone who has a cold or the flu.

6. Avoid crowded conditions when possible.

Do not go into large crowds with young children, those with immune system problems or the chronically ill, unless necessary.

7. Take precautions when traveling to areas affected by avian influenza.

CDC does not currently recommend avoiding travel to countries affected by avian influenza. However, it does recommend avoiding all direct contact with poultry

(including touching well-appearing, sick or dead chickens and ducks). It also recommends avoiding places such as poultry farms and bird markets where live birds are raised or kept, and avoiding the handling of surfaces contaminated with poultry feces or secretions.

For additional information, visit CDC's Travelers' Health Webpage on Southeast Asia at <http://www.cdc.gov/travel/seasia.htm> to educate yourself and others who may be traveling with you about any disease risks and CDC health recommendations for international travel in areas you plan to visit. For a list of affected areas and other information about avian influenza, see this website: <http://www.cdc.gov/flu/avian/index.htm>.

7. Stay home when you are ill.

If you have flu symptoms, stay home from work or school and avoid public activities for at least 5 days (7 days for children).

8. Get an influenza shot annually.

The current influenza vaccine formulation is not protective against avian influenza. However, recent study suggests annual influenza immunization of the elderly has a cumulative protective effect, resulting in reduced mortality, particularly in older individuals.

9. Those at risk should receive a pneumococcal vaccination.

Secondary bacterial pneumonia is a common complication of influenza, a large proportion of which is due to the pneumococcus. It is likely to be the same with pandemic strains. Administering vaccine to people at risk for pneumococcal disease protects them now and during the next pandemic.

The MDPH-developed document *Flu Facts* contains basic information about influenza and personal measures individuals can take to protect themselves and their families (<http://www.mass.gov/dph/cdc/epii/flu/flufacts.htm#en>). In addition, posters, brochures and fact sheets promoting cough etiquette and handwashing are also available (<http://www.mass.gov/dph/cdc/handwashing/hw.htm>).

For more information visit:

- MDPH Flu Website: www.mass.gov/dph/flu
- CDC influenza website: www.cdc.gov/flu
- WHO avian influenza website: http://www.who.int/csr/disease/avian_influenza/en/index.html

If you have any questions or need assistance in obtaining any materials from MDPH, please call the Division of Epidemiology and Immunization at 617-983-6800

References

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